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ABSTRACT

Although numerous studies focus upon computer attitudes and computer anxiety, relatively few studies analyze the interaction between a computer laboratory assistant and the individual who is asking the question. This paper begins with a brief overview of the literature that discusses attitudes towards computers, computer anxiety, and computer training considerations. The paper then discusses the work of J. L. Alty and M. J. Coombs who studied advisory services and interactions at the University of Liverpool. The paper concludes with a study of the interaction between lab assistants and 32 communication students at Duquesne University (Pennsylvania) to determine whether perceived future computer use affects the students' attitudes toward computers and increases interactions with computer laboratory assistants. The paper notes that these students will be required to use computers in the future because of their chosen career field. The paper reports that respondents with a higher prior computer experience level were more comfortable with using computers than those with lower prior computer experience levels, while hypotheses regarding sex differences in interaction with assistants and comfort in using computers were not supported. Sample students responses concerning attitudes toward predicted computer use are attached. Contains 47 references. (Author/RS)

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Computer Laboratory Assistant Interactions with Communication Students

by Karen O'Donnell

ABSTRACT:

Although numerous studies focus upon computer attitudes and computer anxiety, relatively few studies analyze the interaction between a laboratory assistant and the individual who is asking the question. This paper begins with a brief overview of the literature available that discusses (1) attitudes toward computers, (2) computer anxiety, and (3) computer training considerations. It then discusses the work of J.L. Alty and M.J. Coombs who studied advisory services and interactions at the University of Liverpool. The paper concludes with a study of the interaction between lab assistants and communication students at Duquesne University. These students will be required to use computers in the future because of their chosen career field. The researcher desired to know whether or not this perceived future computer use affects the students' attitudes toward computers and increases interactions with computer laboratory assistants. Study results are included.

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INTRODUCTION

Over the past few years, the cost of computer systems has dropped to the point where almost anyone who desires to own a computer can now afford one. The availability of 486 machines have caused 386 and 286 machines to drop significantly in price. When 586 machines become more readily available, the process will repeat itself with all lower models becoming even more affordable. Because of this reduced cost, computers are becoming more popular at both large and small businesses. Consequently, employers are placing more emphasis on computer skills when they interview job applicants. This is particularly true in the communication profession, especially with the significant improvements in computer graphic design that have occurred over the past few years. Despite the reduced cost and increased use of computers in businesses, however, many individuals still do not feel comfortable with the technology. This paper will provide an overview of the research available in the field, followed by a study of attitudes of communication students at Duquesne University toward computers and computer use.

I. LITERATURE REVIEW:

A. Attitudes Toward Computers

Brown university collected questionnaire responses from 1,106 students, 340 staff members and 176 faculty members in 1984 (Shields--abstract). Eighty-five percent of these respondents had some prior computer experience; almost 75% of the respondents rated their experiences with computers as favorable. The study also determined

that 70% of the respondents used a computer on a weekly basis, and that 60% of the respondents used a computer for word processing at least once during the past six months (Shields--abstract).

Researchers Randy Ellsworth and Barbara Bowman provide a possible explanation for this phenomenon. In their study, they measured student attitudes before and after exposure to microcomputers. These researchers found that students who were exposed to computers were more likely to develop favorable attitudes toward computers than control group members (those who were not exposed to computers) were (Ellsworth--abstract). The findings of Stephan Arndt, et. al seem to confirm this hypothesis. These researchers used a sample of 737 students from a large mid-western university (Arndt--abstract). They found that the students who perceived the computer as "pleasing, warm, effective, submissive, and easy to use" possessed more prior computer experience than those who viewed the computer in a negative manner (Arndt--abstract). Linda Temple and Hilary M. Lips found that gender also influenced student attitudes. In their study of 178 female and 127 male 17-60 year-old undergraduates, they found that males reported being more comfortable with using computers than females were (Temple--abstract). They also found that females seemed to ignore career choices and training in the computer science industry, even though they displayed interest in the field (Temple--abstract). Kennewell provided a possible explanation for the difference in men's and women's attitudes: "It seems that fewer men are prepared to admit being frightened of using the machinery" (196).

Jo N. Campbell studied 195 college freshmen and sophomores, 102 of which were female and 93 of which were male. He found that "perceptions of the usefulness of computers in future educational and career plans, self-evaluation of one's own computer proficiency, failure-task attributions, and the stereotyped view of computers as a male domain combine to function as significant predictors of enrollment in computer courses" (Campbell--abstract). This could be why Peter Lieskovsky, in his study of 200 Czech electrotechnical and philosophy students, found that "technical (students) showed significantly more positive attitudes toward computer use than did philosophy (students)" (Lieskovsky--abstract). It also explains why Ray Braswell found, through preliminary results of his study, that older students who return to a university to complete their degree seem to possess a more positive attitude toward computers than new students possess (abstract). At the end of a computer literacy course, however, the 28 graduate and undergraduate subjects who ranged in age from 19 to 47 seemed to hold more similar views toward computer use (abstract).

B. Computer Anxiety

Matthew M. Maurer and Michael R. Simonson define computer anxiety as:

> the fear and apprehension felt by an individual when considering the implications of utilizing computer technology, or when actually using computer technology. The individual is in the state [of

> computer anxiety] because of the fear of interaction with the computer, even though the computer possesses no immediate or real threat (quoted in Sievert, et. al 244).

After studying 81 male and 81 female university students, F. Farina found that trait anxiety, anxiety toward mathematics, the perceived impact of computers on society, and experience in using computers influence the subject's anxiety toward computer use (abstract). George A. Marcoulides found that this computer anxiety was independent of culture. He studied two groups of college students--one was from Los Angeles, California, and the other was from Hunan, People's Republic of China--and found that "computer anxiety was present to a similar degree in both groups of students" (abstract).

"30% of the nation's office workers (are) not comfortable with video display terminals, word processors, or even computer terminology," according to researchers Nick Nykodym et al. (abstract). Interviews with and surveys of 130 middle-level managers and staff in midwestern business organizations confirm that "there will be a statistically significant correlation between the amount of computer experience and computer apprehension, and there will be a statistically significant correlation between computer apprehension and the amount of education in computer usage" (Nykodym--abstract). Pradeep K. Tyagi from San Diego State University explained the reason for this phenomena. He stated, "Experience with computers helps remove the fear of (the) unknown and reduces the anxiety regarding

one's capabilities to handle computer operations" (Tyagi 90).

Magid Igbaria and Saroj Parasuraman confirmed some of Nykodym's hypotheses in their study of computer anxiety and attitudes toward computers among 166 managers. These researchers confirmed Nykodym's hypothesis that "education is negatively related to computer anxiety" (Igbaria and Parasuraman--abstract). They also found that "external locus of control and math anxiety contribute to increased computer anxiety" (Igbaria and Parasuraman--abstract).

Steve Kennewell, author of "Computing for the Terrified," which is based on an in-service training initiative in a Local Education Authority in Wales, believes that those who experience computer anxiety "are afraid...not so much of the machines, but of their own ignorance" (195). Kennewell also cited M. Fisher's research in the field, which indicates potential causes of the existing computerphobia, including: "the rapidity of technological change; the apparent relation with mathematics, which also induces anxiety; the feeling that the field is a male preserve; (and) contact with software which is designed to be used only by experts" (196). Symptoms of computerphobia, according to Fisher, include "a fear of damaging equipment, and even a refusal to accept the existence of computers" (Kennewell 196).

Matthew M. Maurer and Michael R. Simonson identified other characteristics of the computer phobic. These included: "1. Avoidance of computers and the general areas where computers are located; 2. Excessive caution with computers; 3. Negative remarks about computers; (and) 4. Attempts to cut short the necessary use of

computers" (quoted in Sievert, et. al 244).

It is significant that in the "Computing for the Terrified" course that Kennewell writes about, prior computer use did not seem to effect the participants' perceptions of computers. Kennewell elaborates: "Although only one-third had never used a computer before the course, over two-thirds were initially frightened of damaging the equipment when they used it, and over half had not expected to understand any instructions concerned with the computer" (198).

One would assume that a subject's anxiety toward computers would decrease as his attitude toward computers increased in the positive direction. Peter Lieskovsky believed that this was true and tested the hypothesis on 200 Czech electrotechnical and philosophy students (abstract). It is significant that the results of his study did not confirm this hypothesis (Lieskovsky--abstract). It is also interesting to note that George A. Marcoulides found that "computer anxiety was a more important predictor of computer achievement than previous computer experience and that anxiety was present regardless of previous experience" (abstract--anxiety and achievement). Gail L. Fann, et. al, elaborated on a finding by T. Hill, N.D. Smith, and M.F. Mann, and provided an important insight: "If individuals do not believe that they can interact successfully with computers, they most likely will avoid computers no matter how useful the computers may be" (308).

C. Computer Training Considerations

"US businesses spend approximately $30 billion on education and

training annually" (Ross--abstract). Thirty percent of this amount is used for computer and software training, according to Ross (abstract).

Patricia Cinelli interviewed technical data processing trainers who identified the following training problems that they encounter through their work:

(1) explaining concepts when some subjects lack prior computer knowledge

(2) matching individual needs with the proper course

(3) determining the proper amount of training

(4) achieving significant results in a timely manner

(5) dealing with management's lack of commitment for training (abstract).

Kennewell pointed out another large problem with computer skills courses. He explained:

> Although (computing) courses do not assume any particular computing knowledge, they generally skip certain fundamental techniques (e.g. how to connect and start the machine) and also assume (participants) have enough knowledge of the jargon to be able to identify what they want to be introduced to (Kennewell 195).

Naomi Karten is also critical of the existing computer training. She believes that "training does not teach users how to most effectively use the technology and their own limited time to support departmental and organizational needs" (Karten--abstract). Peggy E. Ransom and Rebecca Swearingen believe that effective training must

utilize hands-on experience and must take into consideration the "types of experiences the students have had" (abstract).

Jane Seelbach compared computer education to driver's education in her article, "How to Ease the Pain of Computer Training" (abstract). She believes that both utilize the same steps, quoted below:

(1) learning the language and relationships

(2) learning the procedures

(3) designing delivery (abstract).

Seelbach believes that individuals who view themselves as self-directing, who possess a problem-oriented approach to learning, and who tend to learn from experience can benefit more from the training sessions than those who do not share these views can benefit (abstract).

Mary Castellano and Elias M. Awad believe that training should utilize four activities, quoted below:

(1) planning, which includes assessment of the education and training needs of affected employees and encourages staff participation from the start

(2) actual training, conducted off-site in limited time segments with homogeneous work groups using pertinent materials and readable documentation

(3) skills reinforcement via special projects

(4) advanced training, broken down into 3- or 4-hour modules that cover particular business applications of the system (abstract).

Castellano and Awad believe that thorough training can effectively help subjects to overcome computer phobia (abstract). Steven H. Appelbaum and Brenda Primmer concur with many of Castellano and Awad's tenets. Appelbaum and Primmer believe that instructors assigned to computer anxious individuals must devise a training program that includes the following steps (quoted below):

(1) Assess training needs

(2) Account for the human factor in system and training design

(3) Provide a desensitization period to prepare employees for the transition to computers

(4) Provide advanced training as employees progress (abstract).

Appelbaum and Primmer believe that these steps can cause employees to "welcome technological change and look forward to the opportunities beyond it" (abstract). Chuck Richard believes that training must do more than "account for the human factor in system and training design," as Appelbaum and Primmer suggest. Instead, he believes that trainers should design programs that include "customized courses so the individuals can work at their own speed and learning ability" (Richard--abstract). Jane Robson believes that among the needs of a good training program are "dedicated instructors who are up to date on the latest technology" (abstract). She also believes that it is necessary to identify: "(1) who uses the technology, (2) what they need the technology for, (3) how it will affect their productivity, and (4) what they hope to accomplish" (abstract). Marcoulides

believes that trainers must create a less stressful learning environment to enable computer anxiety to be reduced (abstract--anxiety and achievement).

Kennewell elaborates on this idea. He states that adults do not learn in the same manner as children learn. To illustrate this point, Kennewell cited M. Knowles' statements about adult learning behaviors: "They do not tend to 'brush off' failure; they are concerned that their experience, and hence their self-image, will be shown to be inadequate; they do not readily learn and accept new ideas; (and) they are less likely to feel that there is time to succeed later if they fail at first" (196). Kennewell also included some of M. Fisher's "standards for successful teaching" in his article. These suggestions include: "interaction with individual students, easy learning stages with continual feedback, clear objectives, and an enthusiastic manner" (Kennewell 196). Kennewell believes that students must be able to realize that they will make mistakes during the learning process and to learn from these mistakes (196). This conclusion is based upon studies conducted on children (Kennewell 196).

D. Interactions with Lab Assistants

According to Kennewell, the "computer terrified" are reluctant to discuss their problems with those individuals who are more knowledgeable in the field because these individuals "do not seem to have much time, use unfamiliar jargon, expect them to acquire knowledge and skills too quickly, (and) will probably not be on hand

when something goes wrong" (195). This may explain some of J.L Alty and M.J. Coombs' findings in their study of advisory services and advisory interactions at the University of Liverpool. Among Alty and Coombs' findings are the following:

- The advisory service has the following characteristics: "users could obtain information as they required it; the information was in some way adapted to their particular level of understanding; the service provided a substitute for formal training on some aspects of the local computer system; it provided an index to documentation on some of the less used packages and utilities" (Coombs 407).
- "Official sources of guidance were expected to yield correct information most of the time; unofficial sources were allowed to be wrong (Alty 397).
- Most of the computer advisors/consultants at the University of Liverpool were "largely self-taught, the only formal training having been received from user courses" (Alty 392).
- None of the computer advisors/consultants at the University of Liverpool "had been trained in techniques of answering computing queries" (Alty 392).
- "Few users from any faculty appeared to use textbooks or journals and those that did were working in areas in which computing was highly integrated with their topic of research" (Alty 394).

- "The majority of visits (to the advisor/consultant) (76-100%) at both Liverpool and Birmingham were motivated by the failure of a program" (Alty 395).
- Users reported that "they often felt they did not completely understand the advice even though they could recall it and apply it" (Alty 398); they believed that advisors did not present the information in accordance with the user's level of knowledge (Alty 402).
- Users believed that "advisors were very successful at solving their queries but that they were not good at explaining the solution" (Alty 399).
- Interactions with lab assistants follow the pattern of "(a) Definition of Query; (b) Formulation of Solution; (and) (c) Communication of Solution" (Coombs 427).
- "Advisors claim that users do not want explanations but simply want to know what to do" (Alty 399).
- Advisors are attempting to do several things at once; they, therefore, are limited in the amount of time that they can devote to one individual (Coombs 426).
- "User expertise contributed to the interest of an advisory interaction" (Alty 399); advisors displayed more interest in those individuals who were experienced users of the system.
- "Expert users were much more satisfied with the service than inexpert users (were)" (Coombs 407).

- "Experts claimed that they had no difficulty in understanding the advice and that they had friendly relations with advisors" (Coombs 407-408).

- Inexperienced users also perceived advisors as "less sympathetic and sensitive to their needs" (Alty 400).
- "(Inexperienced users) frequently did not understand the advisor but positively responded to him to keep him working at their problem" (Coombs 416).
- In most cases, the user did not ask the advisor for an explanation even though the user didn't understand the information given (Coombs 417).
- "Only occasionally did advisors ask users to copy down the instructions given, and explicitly attempt to test if the user understood them" (Coombs 418).
- "Advisors define their role rather narrowly as 'advice givers' rather than as teachers" (Coombs 426).

When participants in the study were regrouped according to expertise level, the following was found:

> "(a) far more advisor control with inexpert users; (b) the information communicated to be highly operational in nature with inexpert users; (and) (c) conversations between advisors and expert users not to be controlled by one party. Furthermore, there was a marked increase in advisor explanation to the expert user" (Coombs 428).

At the University of Liverpool, students with a computer

question had to visit the computer center during specified business hours if they wanted their question to be answered (Alty 392); at Duquesne University, students can ask questions to laboratory assistants who are present when labs are open for student use, or they may contact the university's computing center, Center for Communication and Information Technology (CCIT), for input on how to solve their problem.

II. PROPOSAL AND HYPOTHESES

I wanted to determine the attitudes of Duquesne students who are enrolled in the beginning journalistic writing classes which require the use of computers. These students will be required to use computers in the careers that they intend to pursue after graduation. Based on the research that I've conducted, such a survey has not yet been done. Specifically, I wanted to study their attitudes toward computers, their computer use, and their interactions with lab assistant(s).

Hypotheses of Interest

Research hypothesis 1: Females tend to be more comfortable with interacting with a lab assistant than males.

Research hypothesis 2: Females tend to have more interactions with lab assistants than males.

Research hypothesis 3: Males tend to be more comfortable with using computers than females.

Research hypothesis 4: Respondents taking the course as an elective have a higher computer comfort level than those who are taking the course as a requirement.

Research hypothesis 5: Respondents who believe they don't have enough computer knowledge interact more with a lab assistant than those who believe they have enough knowledge.

Research hypothesis 6: Respondents who have a high predicted use of computers in the future interact more with lab assistants than those who have a low predicted future use.

Research hypothesis 7: Respondents with higher prior computer experience levels are more comfortable with using computers than those with lower prior computer experience levels.

III. METHODS OF STUDY

There are 44 students enrolled in Duquesne University's Reporting and Writing I and II courses for the Fall 1992 semester. Of this number, I was able to collect responses from 32 of these individuals, or 72.7%. Since this study only intends to make predictions about Duquesne University's Reporting and Writing students, I believe that this is an adequate sample size for a statistically-significant survey.

IV. STUDY RESULTS

Frequency Table Information:

AGE: The respondents ranged in age from 18 years of age to 37 years of age. The average age of respondents was 22 years of age. It is significant that the median age was 21, and the modal age was 19.

GENDER: 59.4% of the respondents were female, and 40.6% of the respondents were male.

COURSE: 27 respondents, or 84.4%, were enrolled in Reporting and Writing I. Since only 5 respondents, 15.6%, were enrolled in Reporting and Writing II, these students were combined with the Reporting and Writing I students for analysis.

Only 7 students, 21.9%, took the class as an elective. The remainder, 78.1%, took the course because it was a graduation requirement.

CLASS STANDING: One student, 3.1%, was a freshman; 9 students, 28.1%, were sophomores; 10 students, 31.3%, were juniors; and 12 students, 37.5%, were seniors.

PRIOR EXPERIENCE: Only 2 students, 6.3%, said they had no prior computer experience. 78.2% ranked their prior computer experience as between average and very high prior experience (between 3-5 on a 5-point scale).

COMFORT LEVEL: 93.8% of the respondents rated their computer comfort level as between average and very high comfort level (between 3-5 on a 5-point scale).

PREDICTED USE: 100% of the respondents rated their future computer use as between average and very high predicted use (between 3-5 on a 5-point scale).

REACTION: 64.5% of the respondents rated this predicted future use as positive; 25.8% rated it as negative; and 9.7% rated it as neutral. One student skipped this question.

COMPUTER KNOWLEDGE: 75% of the respondents believed they possessed enough computer knowledge prior to taking Reporting and Writing; 25% believed they lacked the necessary knowledge.

CLASS REQUIREMENT: 74.2% of the respondents indicated that the university should require a computer course; 25.8% indicated that there shouldn't be such a requirement. One student skipped this question.

COMFORT WITH ASKING ASSISTANT QUESTIONS:

89.3% of the respondents indicated that they were comfortable asking questions; 10.7% indicated that they were uncomfortable. Four students skipped this question.

NUMBER OF INTERACTIONS WITH A LAB ASSISTANT:

25% of the students indicated that they never interacted with a lab assistant; 59.4% said they interacted with a lab assistant 1-2 times/week; and 15.6% indicated that they interacted with a lab assistant 3-5 times/week.

ANALYSIS:

Research hypothesis 1: Females tend to be more comfortable with interacting with a lab assistant than males.

In the Chi-Square test $p>.05$ which causes us to fail to reject our null hypothesis of no association between the respondent's sex and his/her comfort in interactions with lab assistants.

Because 2 of 4 (50%) of the cells have a minimum expected frequency that is < 5, we must question the validity of the Chi-Square measure.

The Lambda with Assist dependent is .00000. Since this lambda falls between the 0-.2 range, there is only a slight, negligible association between the two variables. This seems to agree with the Chi-Square result described above.

The crosstabulation reveals that 93.8% of the female respondents and 83.3% of the male respondents are comfortable with asking the lab assistant questions.

Consequently, we fail to reject the null hypothesis of no association.

Research hypothesis 2: Females tend to have more interactions with

lab assistants than males.

In the Chi-Square test, p>.05 which causes us to fail to reject our null hypothesis of no association between the respondent's sex and the number of his/her interactions with lab assistant(s).

Because 4 of 6 (66.7%) of the cells have a minimum expected frequency that is < 5, we must question the validity of the Chi-Square measure.

The Lambda with Interact dependent is .00000. Since this lambda falls between the 0-.2 range, there is only a slight, negligible association between the two variables. This seems to agree with the Chi-Square result described above.

The crosstabulation reveals that 21.1% of the female respondents interact 0 times/week with a lab assistant; 52.6% interact 1-2 times/week with a lab assistant; and 26.3% interact 3-5 times/week with a lab assistant. It also reveals that 30.8% of male respondents interact 0 times/week with a lab assistant; and 69.2% interact 1-2 times/week with a lab assistant.

There is not enough of a difference between male and female interactions to support our research hypothesis. Consequently, we fail to reject our null hypothesis of no association.

Research hypothesis 3: Males tend to be more comfortable with using computers than females.

In the Chi-Square test, p>.05 which causes us to fail to reject

our null hypothesis of no association between the respondent's sex and his/her computer comfort level.

Because 5 of 8 (62.5%) of the cells have a minimum expected frequency that is < 5, we must question the validity of the Chi-Square measure.

The Lambda with Comfort dependent is .00000. Since this lambda falls between the 0-.2 range, there is only a slight, negligible association between the two variables. This seems to agree with the Chi-Square result described above.

The crosstabulation reveals that 89.5% of the female respondents and 100% of the male respondents rated themselves as comfortable with using computers.

Consequently, we fail to reject the null hypothesis of no association.

Research hypothesis 4: Respondents taking the course as an elective have a higher computer comfort level than those who are taking the course as a requirement.

In the Chi-Square test, $p>.05$ which causes us to fail to reject our null hypothesis of no association between the type of course (elective or requirement) and the respondent's computer comfort level.

Because 6 of 8 (75%) of the cells have a minimum expected

frequency that is < 5, we must question the validity of the Chi-Square measure.

The Lambda with Comfort dependent is .00000. Since this lambda falls between the 0-.2 range, there is only a slight, negligible association between the two variables. This seems to agree with the Chi-Square result described above.

The crosstabulation reveals that 100% of those students taking the course as an elective rated their comfort level between 3-5 on a five-point scale. Ninety-two percent of those students who took the course as a requirement, however, also rated their comfort level between 3-5 on a five-point scale.

Consequently, we fail to reject the null hypothesis of no association.

Research hypotheses 5 & 6 were inspired by the following findings:

Fann et. al, in her study of 829 undergraduates in business communication classes, did not reject her null hypothesis that "No significant difference exists between those students with high and those with low attitudes toward the microcomputer and their perception of the utility of training instructions" (313).

Fann et. al also found that another of their null hypotheses was not rejected. It stated, "No significant difference exists between those students with high and those with low attitudes toward the computer and their perception of training" (313).

Furthermore, Fann et. al, found that "those with less computer

experience tended to express the desire to attend a training session and to consult a computer-literate friend" (315).

Research hypothesis 5: Respondents who believe they don't have enough computer knowledge interact more with a lab assistant than those who believe they have enough knowledge.

In the Chi-Square test, $p>.05$ which causes us to fail to reject our null hypothesis of no association between the respondent's possession of enough computer knowledge and the number of his/her interactions with a computer lab assistant.

Because 4 of 6 (66.7%) of the cells have a minimum expected frequency that is < 5, we must question the validity of the Chi-Square measure.

The Lambda with Interact dependent is .00000. Since this lambda falls between the 0-.2 range, there is only a slight, negligible association between the two variables. This seems to agree with the Chi-Square result described above.

The crosstabulation reveals that of the students who didn't believe they possessed enough computer knowledge, 25% didn't interact with a lab assistant at all; 62.5% interacted with a lab assistant 1-2 times/week; and 12.5% interacted with a lab assistant 3-5 times/week. Of those students who believed that they did possess enough computer knowledge, the same percentage, 25%, didn't interact with a lab assistant at all. In addition 58.3% interacted with a lab

assistant 1-2 times/week, and 16.7% interacted with a lab assistant 3-5 times/week.

Consequently, we fail to reject the null hypothesis of no association.

Research hypothesis 6: Respondents who have a high predicted use of computers in the future interact more with lab assistants than those who have a low predicted future use.

In the Chi-Square test, $p>.05$ which causes us to fail to reject our null hypothesis of no association between the respondent's number of interactions with a lab assistant and his/her predicted future computer use.

Because 7 of 9 (77.8%) of the cells have a minimum expected frequency that is < 5, we must question the validity of the Chi-Square measure.

The Lambda with Interact dependent is .00000. Since this lambda falls between the 0-.2 range, there is only a slight, negligible association between the two variables. This seems to agree with the Chi-Square result described above.

The crosstabulation reveals that of those who ranked their perceived future computer use as 3 on a 5-point scale, 33.3% never interacted with a lab assistant; 50% interacted with a lab assistant 1-2 times/week; and 16.7% interacted with a lab assistant 3-5 times/week. Of those who ranked their perceived future computer use

as 4 on a 5-point scale, 8.3% never interacted with a lab assistant; 83.3% interacted 1-2 times/week with a lab assistant; and 8.3% interacted 3-5 times/week with a lab assistant. Of those who ranked their perceived future computer use as 5 on a 5-point scale, 35.7% never interacted with a lab assistant; 42.9% interacted 1-2 times/week with a lab assistant; and 21.4% interacted 3-5 times/week with a lab assistant.

The gamma value -.05208 also fails to show any definite relationship between the variables.

Consequently, we fail to reject the null hypothesis of no association.

Research hypothesis 7: Respondents with higher prior computer experience levels are more comfortable with using computers than those with lower prior computer experience levels.

This hypothesis serves to test the finding of Sievert et al. In her study of 99 subjects from the University of Missouri-Columbia libraries, she found that "those who had taken a formal computer class were significantly less anxious than those who had not" (249).

In the Chi-Square test, $p<.05$ which causes us to reject our null hypothesis of no association between the respondent's comfort level and past computer experience.

Because 18 out of 20 (90%) of the cells have a minimum expected

frequency that is < 5, we must question the validity of the Chi-Square measure.

The Lambda with COMFORT dependent is .37500. Since this lambda falls between the .21-.4 range, there is an association between the variables, albeit a low-small one. This seems to agree with the Chi-Square result described above. The gamma value, .63137, also seems to indicate an association between the variables.

The crosstabulation reveals that of those who rated themselves as having no prior computer experience (1 on a five-point scale), 100% rated their comfort with using computers as 3 on a 5-point scale, or average. Of those who rated their prior computer experience as 2 on a 5-point scale, 80% rated their comfort with using computers as 3 or higher on a five-point scale. Of those who rated their prior computer experience as 3 on a 5-point scale, 91.7% rated their comfort with using computers as 3 or higher on a five-point scale. Of those who rated their prior computer experience as 4 on a 5-point scale, 100% rated their comfort with using computers as 3 or higher on a five-point scale. Finally, of those who rated their prior computer experience as 5 on a 5-point scale, 100% rated their comfort with using computers as 5 on a 5-point scale.

Consequently, we have support to reject the null hypothesis of no association. It appears as if people with a higher level of past computer use are more comfortable with using computers than those who have a lower level of past computer use. The research hypothesis, therefore, is supported.

V. DISCUSSION:

I was unable to reject null hypotheses 1-6, based on the results of this study. Only research hypothesis 7, which concerned the relationship between past experience and comfort with computers, was supported. It is significant that research hypothesis 7 was supported, because other studies have supported this hypothesis. If this hypothesis was not supported in this study, then the statistical reliability of this study might be questioned.

There are several possible reasons why research hypotheses 1-6 were not supported in this study:

(1) There actually isn't any relationship between the variables involved.

(2) Other factors not studied in this survey are influencing the results. A sampling of possible influential factors follows:

    (1) the personality of the respondents

    (2) the personality of the laboratory assistant(s)

    (3) the motivation of the respondents

    (4) the respondents' view of the learning process

    (5) the respondents' fears and insecurities toward computers and computer use

(3) The survey size was too small to provide significant results.

It is impossible within the confinements of this simple study to determine if any of the above suggestions had anything to do with the results of this study. Further research is necessary, preferably at

a larger university with more students enrolled in journalism classes. This could help to determine if the sample size in this study skewed the results. In addition, other studies should be conducted to determine if the other factors, such as those listed above, influenced the results. Based on my research, this subject area has not been frequently or thoroughly explored by researchers. With all of the still unanswered questions, I hope that this will change in the near future.

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Note: A sampling of responses to various questions follows. It should be noted that there were more female participants in the survey, and that the female participants tended to be more vocal. Many of the participants skipped these questions on the survey. Consequently, these responses should not be used to classify the opinions of each sex on these issues.

ATTITUDES TOWARD PREDICTED FUTURE COMPUTER USE

SAMPLE FEMALE RESPONSES:

"I am looking forward to using computers at work, because (they) save time, and everyone uses computers today for just about everything--stats, references, etc."

"I'm looking forward to it because there is so much you can do nowadays on a computer--but it also scares me, because there are so many programs out that I wonder if I will be able to (learn) them easily or not."

"I am nervous about it, because it seems like every computer I use has something new I have to learn about."

"I'm not looking forward to it, but I know it will be happening."

"I don't mind working with computers a little, but I'd rather use them rarely. I do know this is unrealistic, though."

"I do not particularly enjoy working with computers, however, I do feel more comfortable using them since I have gotten more experience with them this semester."

"I have a lot to learn, but I'm not scared. Computers are very useful."

"My major requires a lot of computer use. Although I am not that skilled in using computers, I feel relatively comfortable when I sit down at a computer."

SAMPLE MALE RESPONSES:

"I'm looking forward to it, because it can enhance the output of publications, financial statements, PR, etc."

ATTITUDES TOWARD HAVING A COMPUTER REQUIREMENT

SAMPLE FEMALE RESPONSES:

"Computers are used everywhere today, and it gives you an edge if you are computer literate when applying for a job."

"Computer knowledge is not a benefit in the workplace, it's a necessity. A student who has no computer knowledge is at a definite disadvantage upon graduation."

SAMPLE MALE RESPONSES:

"Computers are becoming more and more a part of everyday life."

"Writing is a technique that all students need to refine. With the advancing technology, typewriters are simply obsolete. Computers are appearing everywhere, and everyone should be computer literate."

ATTITUDES TOWARD LAB ASSISTANTS:

SAMPLE FEMALE RESPONSES:

"It depends on the lab assistant--whether (or not) he/she looks friendly and helpful."

"They are available and knowledgeable. They are very helpful."

"They don't make you feel stupid if you have a question."

"In general, (to answer questions is) what lab assistants are there for, and (they) are usually quite happy to answer questions--it's pointless to sit and be stuck."

"A lab assistant's job is to be knowledgeable about the computers and available for the students. I do not hesitate to ask a question if I am having a problem."

"I asked basic "how-to" questions and they were answered to the point that I understand it now."

SAMPLE MALE RESPONSES:

"I've generally found I know as much about computers as the lab assistant. They generally do not help me. I often find lab assistants do not know as much about computers as they would like everybody to think. Problems usually arise with the damn equipment, not the lab assistant."

"The assistant, in my mind, knew less about the system than I did."

"Most of them are not looking to help people. They either work on their own thing, or they BS."